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PHU, PHUONG M	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/748,598	LIU, HONG	
	Examiner	Art Unit	
	Phuong Phu	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5,7-20,22-27 and 29-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,7-20,22-27 and 29-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12/17/07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is responsive to the Amendment filed on 12/17/07. Accordingly, claims 1-5, 7-20, 22-27 and 29-32 are currently pending; and claims 6, 21 and 28 are canceled.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-5, 7-20, 22-27 and 29-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carsello et al (7,203,254) in view of Fulghum (6,728,326), (both previously cited).

-Regarding claim 1, see figures 3-5, col. 5, line 8 to col. 6, line 35, Carsello et al discloses a mobile station (see figure 3) comprising:

an rf front end (2) including a mixer (14) (see col. 5, lines 8-14), the rf front end configured to receive a signal comprising a plural of data slots (see col. 1, lines 52-54), wherein content of each data slot comprises a sequence of sync symbols (310) and data symbols (316) (see figure 5, col. 6, lines 3-28)), (content of each sequence/data slot considered here as a burst of symbols, and the signal comprising a plural of data slots considered here equivalent with the limitation "data in bursts";

a frequency synthesizer (28, 15) for generating for generating a local oscillator signal for said mixer, the frequency synthesizer including an electronically tunable reference oscillator (15) (see col. 5, lines 8-28);

a sync-sequence identifier (comprising (220)) configured to identify the sync sequences of bursts in a plurality of bursts/data slots (312) and to generate a sync-sequence identifying signal as an indication of sync-sequence (310) detection in each data slot (see col. 5, lines 30-67), (the sync sequence (314), used in the mobile station for frequency correction and therefore considered here equivalent with the limitation “training sequence”, the sync-sequence identifying signal considered equivalent with the limitation " training sequence identifying signal”, and the sync-sequence identifier considered equivalent with “burst training sequence identifier”;

frequency correction signal generator means (comprising (260)) for generating a control signal for tuning said reference oscillator in dependence on said training sequence identifying signal so as to correct an error in the frequency of said reference oscillator (see col. 5, lines 30-67).

Carsello et al does not teach does not teach that the burst training sequence identifier means is configured to identify the training sequences of the bursts in a plurality of slots of a TDMA frame, as claimed.

However, Carsello et al teaches that the burst training sequence identifier means is configured to identify the training sequences (310)’s of the bursts/data slots in a plurality of slots (312)’s (see col. 1, lines 46-58). Carsello et al does not teach whether the plurality of slots are included in a TDMA frame.

Fulghum teaches using a TDMA scheme in a wireless communication system for allowing multiple users/mobile stations to share the same radio carrier frequency in order to improve the spectral efficiency of the system in such a way that said carrier frequency is divided into repeated TDMA frames, the frames subdivided into a plurality of time slots wherein a

mobile station might be assigned one or more slots on said carrier frequency (see col. 1, lines 10-35).

Since the mobile station operates in an environment where more than two mobile stations communicate with one another via rf carrier frequency communications (see figure 3, col. 4, lines 43-46, it would have been obvious for one skilled in the art to implement Carsello et al with a TDMA scheme, as taught by Fulghum, in such a way that a carrier frequency chosen for the communications would be divided into repeated TDMA frames, the frames subdivided into a plurality of time slots of (312"'s), and in each of frames, some time slots would be assigned to the mobile station for receiving and processing as expected, so that with such the implementation, other mobile stations in the environment could share the same carrier frequency on their respective assigned time slots, and therefore the spectral efficiency of the spectral used in the environment would be improved.

With such the implementation, Carsello et al in view of Fulghum teaches that the burst training sequence identifier (comprising (220)) is configured to identify the training sequences (310)'s) of the bursts (312)'s in a plurality of slots of a TDMA frame, as claimed.

-Regarding to claim 2, Carsello et al discloses that the burst training sequence identifier comprises correlator (220) for determining a correlation value (c(n)) (see Equation 1) for part of a burst (r(n)) and each of a plurality of training sequences (s(n)) and identifying the burst training sequence according to the largest correlation value (see col. 5, line 30 to col. 6, line 35).

-Regarding to claim 3, Carsello et al discloses that the correlator is configured, for each of said training sequences (s(n)), to repeatedly cross-correlate a part of the training sequence part of a burst (r(n)) with a training sequence (s(m)), moving said part of the training sequence part of

a burst relative to said train sequence between cross-correlations (see col. 6, line 3 to col. 9, line 48).

-Regarding to claim 4, Carsello et al teaches that the correlator is configured, for each of said training sequences, to repeatedly cross-correlate a part of a burst having SYNC SEARCH WINDOW (314) (see figure 5), greater than the training sequence part (310) of the burst, with a training sequence (s(m)), moving training sequences relative to said part of a burst between cross-correlations (see col. 6, lines 3-35).

-Regarding to claim 5, Carsello et al discloses controller (inherently included in (15)) for tuning the mobile station to a VCO frequency, (considered here equivalent with the limitation "control channel frequency"), to receive control channel bursts (r(n)) and the burst training sequence identifier (comprising (220)) is configured to identify the training sequences of the bursts of said VCO frequency channel, (considered here equivalent with the limitation "control channel"), (see figure 3).

-Regarding to claim 7, Carsello et al in view Fulghum of teaches that said slots are contiguous (see Carsello et al col. 1, lines 51-58, and Fulghum, figure 2).

-Regarding to claim 8, as applied to claim 1, Carsello et al in view of Fulghum teaches that said slot are configurable to be all included in a TDMA frame.

-Regarding claim 9, as similarly applied to claims 1-5, 7, 8 set forth above and herein incorporated, Carsello et al discloses a mobile station (see figures 3 and 5) comprising:

an rf front end (2) including a mixer (14), the rf front end configured to receive a signal comprising a plural of data slots (see col. 1, lines 52-54), wherein content of each data slot comprises a sequence of sync symbols (310) and data symbols (316) (see col. 6, lines 3-28),

(content of each sequence/data slot considered here as a burst of symbols, sequences (310)'s considered here equivalent with the limitation "training sequences", and the signal comprising a plural of data slots considered here equivalent with the limitation "data in bursts including training sequences";

a frequency synthesizer (15, 28) for generating for generating a local oscillator signal for said mixer, the frequency synthesizer including an electronically tunable reference oscillator (15);

a burst training sequence identifier (comprising 220) configured to identify the training sequences of the burst in a plurality of slots (312)'s and to generate a training sequence identifying signal as an indication of sync-sequence (310) detection in each data slot (see col. 5, lines 30-67);

a frequency correction signal generator (comprising (260)) for generating a control signal for tuning said reference oscillator in dependence on said training sequence identifying signal so as to correct an error in the frequency of said reference oscillator,

wherein the burst training sequence identifier comprises correlator (220) for determining a correlation value for part of a burst and each of a plurality of training sequences and identifying the burst training sequence according to the largest correlation value.

Carsello et al does not teach does not teach that the burst training sequence identifier is configured to identify the training sequences of the bursts in a plurality of slots of a TDMA frame, as claimed.

However, Carsello et al teaches that the burst training sequence identifier means is configured to identify the training sequences (310)'s of the bursts/data slots in a plurality of slots

(312)'s of a carrier frequency (see col. 1, lines 46-58). Carsello et al does not teach whether the plurality of slots are included in a TDMA frame.

Fulghum teaches using a TDMA scheme in a wireless communication system for allowing multiple users/mobile stations to share the same radio carrier frequency in order to improve the spectral efficiency of the system in such a way that said carrier frequency is divided into repeated TDMA frames, the frames subdivided into a plurality of time slots wherein a mobile station might be assigned one or more slots on said carrier frequency (see col. 1, lines 10-35).

Since the mobile station operates in an environment where more than two mobile stations communicate with one another via rf communications (see col. 4, lines 43-46), it would have been obvious for one skilled in the art to implement Carsello et al with a TDMA scheme, as taught by Fulghum, in such a way that a chosen carrier frequency for communications would be divided into repeated TDMA frames, the frames subdivided into a plurality of time slots of (312"'s), and in each of frames, some time slots would be assigned to the mobile station for receiving and processing as expected, so that with such the implementation, other mobile stations in the environment could share the same carrier frequency on their respective assigned time slots, and therefore the spectral efficiency of the spectral used in the environment would be improved.

With such the implementation, Carsello et al in view of Fulghum teaches that the burst training sequence identifier(comprising (220)) is configured to identify the training sequences (310)'s) of the bursts (312)'s in a plurality of slots of a TDMA frame, as claimed.

-Claim 10 is rejected with similar reasons set forth for claim 3.

-Claim 11 is rejected with similar reasons set forth for claim 4.

-Regarding claim 12, as similarly applied to claims 1-5, 7-11 set forth above and herein incorporated, Carsello et al discloses a mobile station (see figures 3 and 5) comprising:

an rf front end (2) including a mixer (14), the rf front end configured to receive data in bursts (312)'s ;

a frequency synthesizer (28, 15) for generating for generating a local oscillator signal for said mixer, the frequency synthesizer including an electronically tunable reference oscillator (15);

a controller (inherently include in (15)) for tuning the mobile station to a VCO frequency, (considered here equivalent with the limitation "control channel frequency"), to receive control channel bursts (r(n));

a burst training sequence identifier (comprising (220)) configured to identify training sequences (310)'s of the bursts in a plurality of slots, and generate a training sequence identifying signal; and

a frequency correction signal generator (comprising (260)) for generating a control signal for tuning said reference oscillator in dependence on said training sequence identifying signal so as to correct an error in the frequency of said reference oscillator, wherein the burst training sequence identifier is configured to identify the training sequences of the bursts of said VCO frequency channel, (considered here equivalent with the limitation "control channel").

Carsello et al does not teach does not teach that the burst training sequence identifier is configured to identify the training sequences of the bursts in a plurality of slots of a TDMA frame, as claimed.

However, Carsello et al teaches that the burst training sequence identifier means is configured to identify the training sequences (310)'s of the bursts/data slots in a plurality of slots (312)'s of a carrier frequency (see col. 1, lines 46-58). Carsello et al does not teach whether the plurality of slots are included in a TDMA frame.

Fulghum teaches using a TDMA scheme in a wireless communication system for allowing multiple users/mobile stations to share the same radio carrier frequency in order to improve the spectral efficiency of the system in such a way that said carrier frequency is divided into repeated TDMA frames, the frames subdivided into a plurality of time slots wherein a mobile station might be assigned one or more slots on said carrier frequency (see col. 1, lines 10-35).

Since the mobile station operates in an environment where more than two mobile stations communicate with one another (see col. 4, lines 43-46, it would have been obvious for one skilled in the art to implement Carsello et al with a TDMA scheme, as taught by Fulghum, in such a way that a chosen carrier frequency for communications would be divided into repeated TDMA frames, the frames subdivided into a plurality of time slots of (312'''s), and in each of frames, some time slots would be assigned to the mobile station for receiving and processing as expected, so that with such the implementation, other mobile stations in the environment could share the same carrier frequency on their respective assigned time slots, and therefore the spectral efficiency of the spectral used in the environment would be improved.

With such the implementation, Carsello et al in view of Fulghum teaches that the burst training sequence identifier(comprising (220)) is configured to identify the training sequences (310)'s) of the bursts (312)'s in a plurality of slots of a TDMA frame, as claimed.

-Regarding claim 13, as similarly applied to claims 1-5, 6-12 set forth above and herein incorporated, Carsello et al discloses a mobile station (see figures 3 and 5) comprising

an rf front end (2) including a mixer (14);

a frequency synthesizer (28, 15) for generating for generating a local oscillator signal for said mixer, the frequency synthesizer including an electronically tunable reference oscillator (15);

a burst training identifying means (comprising (220)) for generating a training sequence identifying signal;

frequency correction signal generating means (comprising (260)) for generating a control signal for tuning said reference oscillator in dependence on said training sequence identifying signal so as to correct an error in the frequency of said reference oscillator,

wherein the burst training sequence identifying means is configured to identify the training sequences (310)'s of the bursts in a plurality of slots (312)’s.

Carsello et al does not teach does not teach that the burst training sequence identifying means is configured to identify the training sequences of the bursts in a plurality of slots of a TDMA frame, as claimed.

However, Carsello et al teaches that the burst training sequence identifying means is configured to identify the training sequences (310)’s of the bursts/data slots in a plurality of slots (312)’s of a carrier frequency (see col. 1, lines 46-58). Carsello et al does not teach whether the plurality of slots are included in a TDMA frame.

Fulghum teaches using a TDMA scheme in a wireless communication system for allowing multiple users/mobile stations to share the same radio carrier frequency in order to

improve the spectral efficiency of the system in such a way that said carrier frequency is divided into repeated TDMA frames, the frames subdivided into a plurality of time slots wherein a mobile station might be assigned one or more slots on said carrier frequency (see col. 1, lines 10-35).

Since the mobile station operates in an environment where more than two mobile stations communicate with one another over rf communicaitons(see col. 4, lines 43-46, it would have been obvious for one skilled in the art to implement Carsello et al with a TDMA scheme, as taught by Fulghum, in such a way that a chosen carrier frequency for communications would be divided into repeated TDMA frames, the frames subdivided into a plurality of time slots of (312"'s), and in each of frames, some time slots would be assigned to the mobile station for receiving and processing as expected, so that with such the implementation, other mobile stations in the environment could share the carrier frequency on their respective assigned time slots, and therefore the spectral efficiency of the spectral used in the environment would be improved.

With such the implementation, Carsello et al in view of Fulghum teaches that the burst training sequence identifying means (comprising (220)) is configured to identify the training sequences (310)'s) of the bursts (312)'s in a plurality of slots of a TDMA frame, as claimed.

-Claim 14 is rejected with similar reasons set forth for claim 7.

-Claim 15 is rejected with similar reasons set forth for claim 8.

-Regarding claim 16, as similarly applied to claims 1-5, 7-15 set forth above and herein incorporated, Carsello et al discloses a method (see figures 3 and 5) comprising:

procedure (2) of receiving bursts of data including training sequences (310)'s at a mobile station;

procedure (comprising (220)) of identifying the training sequences in the bursts in a plurality of slots and generating a training sequence identifying signal;

procedure (comprising (260)) of generating a tuning control signal in dependence on said training sequence identifying signal; and

procedure (28, 15) of applying the tuning control signal to a tunable reference oscillator (15) in a frequency synthesizer (15, 28) that provides a local oscillator signal to a front end mixer (14) to perform frequency correction.

Carsello et al does not teach that the identifying step identifies the training sequences of the bursts in a plurality of slots of a TDMA frame, as claimed.

However, Carsello et al teaches that the burst training sequence identifying step is configured to identify the training sequences (310)'s of the bursts/data slots in a plurality of slots (312)'s of a carrier frequency (see col. 1, lines 46-58). Carsello et al does not teach whether the plurality of slots are included in a TDMA frame.

Fulghum teaches using a TDMA scheme in a wireless communication system for allowing multiple users/mobile stations to share the same radio carrier frequency in order to improve the spectral efficiency of the system in such a way that said carrier frequency is divided into repeated TDMA frames, the frames subdivided into a plurality of time slots wherein a mobile station might be assigned one or more slots on said carrier frequency (see col. 1, lines 10-35).

Since the mobile station operates in an environment where more than two mobile stations communicate with one another (see col. 4, lines 43-46, it would have been obvious for one skilled in the art to implement Carsello et al with a TDMA scheme, as taught by Fulghum, in

such a way that a chosen carrier frequency for communications would be divided into repeated TDMA frames, the frames subdivided into a plurality of time slots of (312"'s), and in each of frames, some time slots would be assigned to the mobile station for receiving and processing as expected, so that with such the implementation, other mobile stations in the environment could share the carrier frequency on their respective assigned time slots, and therefore the spectral efficiency of the spectral used in the environment would be improved.

With such the implementation, Carsello et al in view of Fulghum teaches that the burst training sequence identifying step(comprising (220)) is configured to identify the training sequences (310)'s) of the bursts (312)'s in a plurality of slots of a TDMA frame, as claimed.

-Claim 17 is rejected with similar reasons set forth for claim 2.

-Claim 18 is rejected with similar reasons set forth for claim 3.

-Claim 19 is rejected with similar reasons set forth for claim 4.

-Claim 20 is rejected with similar reasons set forth for claim 5.

-Claim 22 is rejected with similar reasons set forth for claim 7.

-Claim 23 is rejected with similar reasons set forth for claim 8.

-Regarding claim 24, as similarly applied to claims 1-5, 7-20, 22, 23 set forth above and herein incorporated, Carsello et al discloses a Carsello et al discloses a method (see figures 3 and 5) comprising:

procedure (2) of receiving bursts (312)'s of data including training sequences (310)'s at a mobile station

procedure (comprising (220)) of identifying the training sequences in the bursts in a plurality of slots and generating a training sequence identifying signal;

procedure (comprising (260)) of generating a tuning control signal in dependence on said training sequence identifying signal; and

procedure (28, 15) of applying the tuning control signal to a tunable reference oscillator (15) in a frequency synthesizer (28, 15) that provides a local oscillator signal to a front end mixer (14) to perform frequency control, wherein identifying the burst training sequence comprises cross-correlating a part of a burst and a plurality of training sequences of the bursts in the plurality of slots.

Carsello et al does not teach that the identifying step identifies the training sequences of the bursts in a plurality of slots of a TDMA frame, so that the cross-correlating step would cross-correlating the part of the burst and the plurality of training sequences of the bursts in the plurality of slots of the TDMA frame, as claimed.

However, Carsello et al teaches that the burst training sequence identifying step is configured to identify the training sequences (310)'s of the bursts/data slots in a plurality of slots (312)'s of a carrier frequency (see col. 1, lines 46-58). Carsello et al does not teach whether the plurality of slots are included in a TDMA frame so that the cross-correlating step would cross-correlating the part of the burst and the plurality of training sequences of the bursts in the plurality of slots of the TDMA frame.

Fulghum teaches using a TDMA scheme in a wireless communication system for allowing multiple users/mobile stations to share the same radio carrier frequency in order to improve the spectral efficiency of the system in such a way that said carrier frequency is divided into repeated TDMA frames, the frames subdivided into a plurality of time slots wherein a

mobile station might be assigned one or more slots on said carrier frequency (see col. 1, lines 10-35).

Since the mobile station operates in an environment where more than two mobile stations communicate with one another (see col. 4, lines 43-46, it would have been obvious for one skilled in the art to implement Carsello et al with a TDMA scheme, as taught by Fulghum, in such a way that a chosen carrier frequency for communications would be divided into repeated TDMA frames, the frames subdivided into a plurality of time slots of (312'"s), and in each of frames, some time slots would be assigned to the mobile station for receiving and processing as expected, so that with such the implementation, other mobile stations in the environment could share the carrier frequency on their respective assigned time slots, and therefore the spectral efficiency of the spectral used in the environment would be improved.

With such the implementation, Carsello et al in view of Fulghum teaches that the burst training sequence identifying step(comprising (220)) is configurable to identify the training sequences (310)'s) of the bursts (312)'s in the plurality of slots of a TDMA frame, and cross-correlate the part of a burst and the plurality of training sequences of the bursts in the plurality of slots of the TDMA frame, as claimed.

-Claim 25 is rejected with similar reasons set forth for claim 3.

-Claim 26 is rejected with similar reasons set forth for claim 4.

-Claim 27 is rejected with similar reasons set forth for claim 5.

-Claim 29 is rejected with similar reasons set forth for claim 7.

-Claim 30 is rejected with similar reasons set forth for claim 8.

-Regarding claim 31, as similarly applied to claims 1-5, 7-20, 22-27, 29, 30 set forth above and herein incorporated, Carsello et al discloses a a method (see figures 3 and 5) comprising:

procedure (2) of receiving bursts (content of (312)'s) of data including training sequences ((310)'s at a mobile station;

procedure (comprising (220)) of identifying the training sequences of the bursts in a plurality of slots (312)'s ;

procedure (comprising (260)) of generating a tuning control signal in dependence on said training sequence identifying signal; and

procedure (28, 15) of applying the tuning control signal to a tunable reference oscillator (15) in a frequency synthesizer (28, 15) that provides a local oscillator signal to a front end mixer (14).

Carsello et al does not teach that the identifying step identifies the training sequences of the bursts in a plurality of slots of a TDMA frame, as claimed.

However, Carsello et al teaches that the burst training sequence identifying step is configured to identify the training sequences (310)'s of the bursts/data slots in a plurality of slots (312)'s of a carrier frequency (see col. 1, lines 46-58). Carsello et al does not teach whether the plurality of slots are included in a TDMA frame.

Fulghum teaches using a TDMA scheme in a wireless communication system for allowing multiple users/mobile stations to share the same radio carrier frequency in order to improve the spectral efficiency of the system in such a way that said carrier frequency is divided into repeated TDMA frames, the frames subdivided into a plurality of time slots wherein a

mobile station might be assigned one or more slots on said carrier frequency (see col. 1, lines 10-35).

Since the mobile station operates in an environment where more than two mobile stations communicate with one another (see col. 4, lines 43-46, it would have been obvious for one skilled in the art to implement Carsello et al with a TDMA scheme, as taught by Fulghum, in such a way that a chosen carrier frequency for communications would be divided into repeated TDMA frames, the frames subdivided into a plurality of time slots of (312'"s), and in each of frames, some time slots would be assigned to the mobile station for receiving and processing as expected, so that with such the implementation, other mobile stations in the environment could share the carrier frequency on their respective assigned time slots, and therefore the spectral efficiency of the spectral used in the environment would be improved.

With such the implementation, Carsello et al in view of Fulghum teaches that the burst training sequence identifying step(comprising (220)) is configured to identify the training sequences (310)'s) of the bursts (312)'s in a plurality of slots of a TDMA frame, as claimed.

-Claim 32 is rejected with similar reasons set forth for claim 5.

Response to Arguments

4. Applicant's arguments filed 12/17/07 have been fully considered but they are not, in part, persuasive.

As a result, the previous objection on Drawings has been withdrawn since the Drawings were amended and overcome the objection.

Applicant's arguments with respect to claims 1-5, 7-20, 22-27 and 29-32 are not persuasive. The applicant mainly argues that:

(i) With respect to claims 1-5, 9-11, 16-20, 24-27, 31 32, Carsello et al does not teach the invention as claimed.

(ii) With respect to claim 2, Carsello et al does not teach that the burst training sequence identifier includes a correlator for determining a correlation value for part of a burst

(iii) With respect to claims 7, 8, 13-15, 22, 23, 29, 30, Carsello et al in view of Fulghum does not teach a "burst training sequence identifying means" as claimed; there is no disclosure related to a burst training sequence or a training sequence signal, as claimed; and there is no reason to combine Carsello et al with of Fulghum.

-Regarding part (i), Applicant's arguments with respect to claims 1-5, 9-11, 16-20, 24-27, 31 and 32 have been considered but are moot in view of the new ground(s) of rejection to the claims as being unpatentable over Carsello et al in view of Fulghum set forth above in this Office Action.

-Regarding to part (ii), the examiner respectively disagrees. As explained above in this Office Action, Carsello et al teaches burst training sequence identifier (comprising (220) (see figure 3)) configured to identify the sync sequences of bursts in a plurality of data slots (312)'s (see figure 5), wherein each data slot contains a burst of symbols and each burst comprises sync-sequence (310) and data sequence (316)), and to generate a sync-sequence identifying signal as an indication of sync-sequence (310) detection in each data slot (see col. 5, lines 30-67), (note that the sync sequence (310) is used in the mobile station for frequency correction and therefore considered here equivalent with the limitation "training sequence", the sync-sequence identifying signal considered equivalent with the limitation " training sequence identifying signal". Further, Carsello et al teaches that the burst training sequence identifier comprises correlator (220) for

determining a correlation value (c(n)) (see Equation 1) for part of a burst (r(n)) and each of a plurality of training sequences (s(n)) and identifying the burst training sequence according to a largest correlation value (see col. 5, line 30 to col. 6, line 35). So, in comparison with limitations recited in claim 2, Carsello et al teaches the burst training sequence identifier includes a correlator (220) for determining the largest correlation value, (the largest correlation value considered here equivalent with the limitation “a correlation value"), for each of training sequence (310), the training sequence being a part of a burst contained in a data slot (312), (the training sequence considered here equivalent with the limitation “part of a burst").

-Regarding part (iii), the examiner also disagrees. As similarly being explained in part (ii), Carsello et al teaches a burst training sequence identifier (comprising (220) (see figure 3)) configured to identify the sync sequences of bursts in a plurality of data slots (312)’s (see figure 5), wherein each data slot contains a burst of symbols and each burst comprises sync-sequence (310) and data sequence (316)), and to generate a sync-sequence identifying signal as an indication of sync-sequence (310) detection in each data slot (see col. 5, lines 30-67), (note that the sync sequence (310) is used in the mobile station for frequency correction and therefore considered here equivalent with the limitation “training sequence”, and Carsello et al burst training sequence identifier (comprising (220)) considered here equivalent with the limitation “burst training sequence identifier”).

Reason for combining Carsello et al and Fulghum are explained as following:

Carsello et al does not teach does not teach that the burst training sequence identifier is configured to identify the training sequences of the bursts in a plurality of slots of a TDMA frame, as claimed.

However, Carsello et al teaches that the burst training sequence identifier is configured to identify the training sequences (310)'s of the bursts/data slots in a plurality of slots (312)'s, inherently being transmitted and received over a rf carrier frequency (so that in the receiver site, a RF UNIT 2 is required for recovering the signal from the rf carrier frequency) (see figure 3, col. 1, lines 46-58). Carsello et al does not teach whether the plurality of slots are included in a TDMA frame.

Fulghum teaches using a TDMA scheme in a wireless communication system for allowing multiple users/mobile stations to share the same radio carrier frequency in order to improve the spectral efficiency of the system in such a way that said carrier frequency is divided into repeated TDMA frames, the frames subdivided into a plurality of time slots wherein a mobile station might be assigned one or more slots on said carrier frequency (see col. 1, lines 10-35).

Since the mobile station operates in an environment where more than two mobile stations communicate with one another over rf communications (see col. 4, lines 43-46), it would have been obvious for one skilled in the art to implement Carsello et al with a TDMA scheme, as taught by Fulghum, in such a way that a chosen carrier frequency for communications would be divided into repeated TDMA frames, the frames subdivided into a plurality of time slots of (312"'s), and in each of frames, some time slots would be assigned to the mobile station for receiving and processing as expected, so that with such the implementation, other mobile stations in the environment could share the same carrier frequency on their respective assigned time slots, and therefore the spectral efficiency of the spectral used in the environment would be improved.

With such the implementation, Carsello et al in view of Fulghum teaches that the burst training sequence identifier (comprising (220)) is configured to identify the training sequences (310)'s) of the bursts (312)'s in a plurality of slots of a TDMA frame, as claimed.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuong Phu whose telephone number is 571-272-3009. The examiner can normally be reached on M-F (8:00 AM - 4:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on 571-272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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